

TOSHIBA HALL SENSOR GaAs ION IMPLANTED PLANAR TYPE

THS123

HIGH STABILITY MOTOR CONTROL.

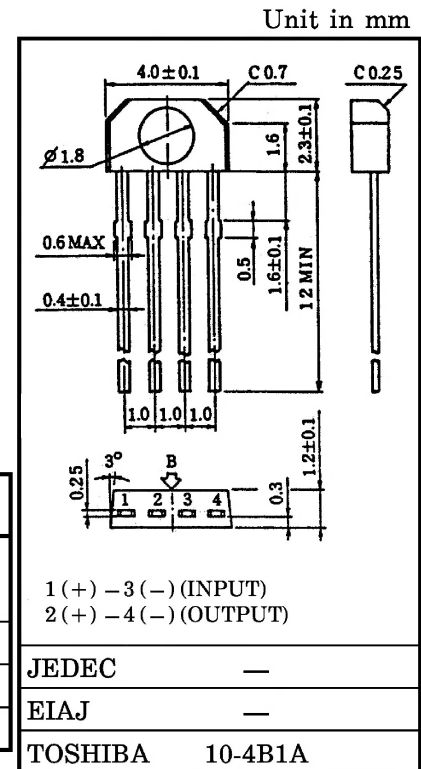
DIGITAL TACHOMETER.

CRANK SHAFT POSITION SENSOR.

- Excellent Temperature Characteristics.
- Wide Operating Temperature Range. (; $-55\sim 125^{\circ}\text{C}$)
- Excellent Output Voltage Linearity.
- High Specific Sensitivity. : $K^*=38\times 10^{-2}/\text{T}$ (Typ.)

MAXIMUM RATINGS ($T_a = 25^{\circ}\text{C}$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Control Current	DC	I_C	10	mA
	1s		15	
Power Dissipation		P_D	150	mW
Operating Temperature Range		T_{opr}	$-55\sim 125$	$^{\circ}\text{C}$
Storage Temperature Range		T_{stg}	$-55\sim 150$	$^{\circ}\text{C}$



Weight : 0.06g

ELECTRICAL CHARACTERISTICS ($T_a = 25^{\circ}\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Internal Resistance (Input)	R_d	$I_C = 5\text{mA}$	450	—	900	Ω
Residual Voltage Ratio	V_{HO}/V_H	$I_C = 5\text{mA}$, $B = 0 / B = 0.1\text{T}$	—	—	± 10	%
Hall Voltage (Note 1)	V_H	$I_C = 5\text{mA}$, $B = 0.1\text{T}$	80	—	190	mV
Temperature Coefficient (Note 2)	V_{HT}	$I_C = 5\text{mA}$, $B = 0.1\text{T}$ $T_1 = 25^{\circ}\text{C}$, $T_2 = 125^{\circ}\text{C}$	—	—	-0.06	$\% / ^{\circ}\text{C}$
Linearity (Note 3)	ΔK_H	$I_C = 5\text{mA}$, $B_1 = 0.05\text{T}$, $B_2 = 0.1\text{T}$	—	—	2	%
Specific Sensitivity (Note 4)	K^*	$I_C = 5\text{mA}$, $B = 0.1\text{T}$	—	38	—	$\times 10^{-2} / \text{T}$
Internal Resistance (Output)	R_{OUT}	$I_C = 1\text{mA}$	—	—	3200	Ω

Note 1 : $V_H = V_{HM} - V_{HO}$ (V_{HM} is meter indication)

Note 2 : $V_{HT} = \frac{1}{V_H(T_1)} \cdot \frac{V_H(T_2) - V_H(T_1)}{T_2 - T_1} \times 100 (\% / ^{\circ}\text{C})$ V_{HO} : Residual Voltage

Note 3 : $\Delta K_H = \frac{K_H(B_2) - K_H(B_1)}{1/2 \{ K_H(B_1) + K_H(B_2) \}} \times 100 (\%)$, $K_H = \frac{V_H}{I_C \cdot B}$ K_H : Product Sensitivity

Note 4 : $K^* = V_H / (R_d \times I_C \times B) = K_H / R_d$

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